

REMARKS

Claims 10, 14-18, 21 and 22 have been amended. Claims 9, 11-13, 19 and 20 have been canceled. Thus, claims 10, 14-18 and 21-33 are now pending in the present application. Reconsideration and withdrawal of the present rejections in view of the comments presented herein are respectfully requested.

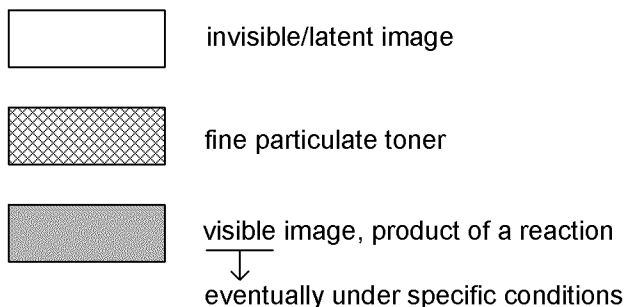
Rejections under 35 U.S.C. 103(a)

The rejections of claims 9-19, 22-30 and 33 under 35 U.S.C. §103(a) as allegedly being unpatentable over Dukler (WO 00/78556) in view of Nagashima (US 4,148,968), and claims 20, 21, 31, and 32 under 35 U.S.C. §103(a) as allegedly being unpatentable over the same combination of references, and further in view of Yanaka (US 2003/0068575), were maintained. The Examiner contends that it would have been obvious to use the chemical reaction of Nagashima for one of the image layers of Dukler so that the image is completely fixed and is obtained with no waiting time. However, as explained below, neither of these combinations of references renders the present claims obvious.

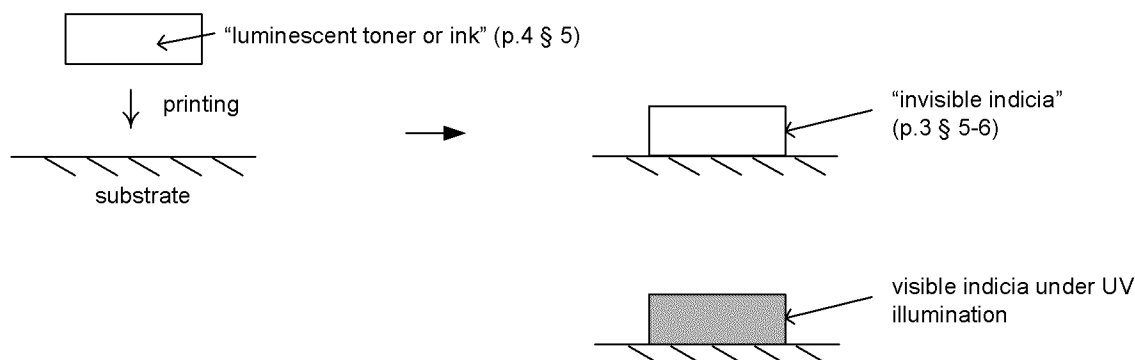
Claims 10, 14, 15, 17, 18, 21, 22

Dukler describes a luminescent toner or ink in which the colored conventional pigments are replaced by luminescent ones. As a consequence, the use of such an ink allows the printing of an indicia invisible under normal lighting conditions and under UV illumination so that the document can be authenticated with a UV lamp as illustrated below.

Caption



Dunkler et al. (WO 00/78556)

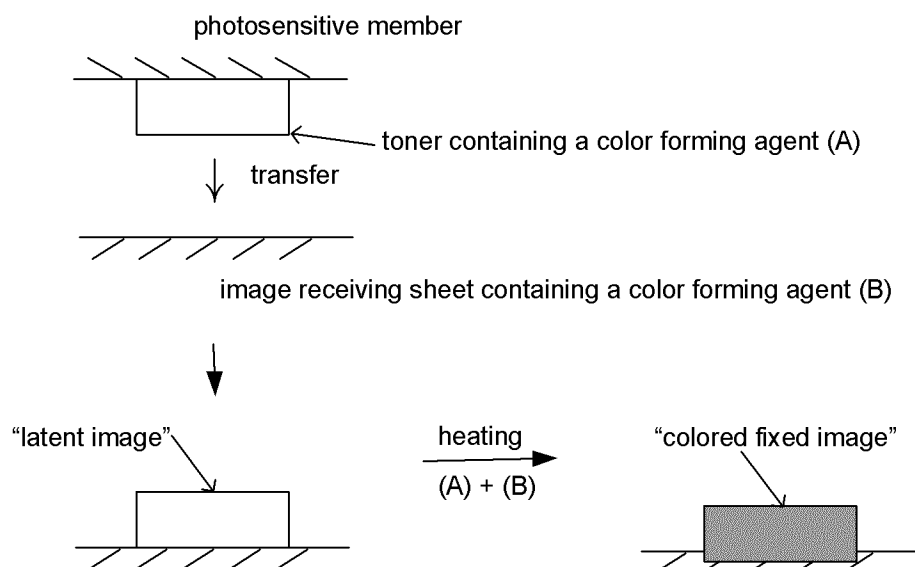


Dunkler et al. describes a luminescent ink or toner composition, whereas in the present claims, the liquid toner comprises a "fine particulate toner" and a reactant which is not luminescent, but only participates in the formation of a luminescent (in particular fluorescent) compound once applied to the substrate comprising the complementary reactant. The luminescent compound is neither the first reactant nor the complementary reactant, but is the product of the reaction between the first reactant and the complementary reactant.

Claim 10 as amended excludes the possibility that the security feature comprises a colored image having the same configuration as the toner image. Nagashima et al. describes a toner containing a color forming agent (A). In the process of Nagashima et al., a "latent image" is produced by printing the toner on the image receiving sheet containing a color forming agent (B). When subjected to heating, the color forming agent (A) reacts with (B). The "latent image" is invisible as long as no heating is performed, and a colored image is obtained after heating: "heating to cause a thermal color forming reaction...resulting in formation of a colored fixed image on the image receiving sheet." (Col. 3, lines 49-53). In the process of Nagashima et al., the visible image is obtained by printing a "color forming agent (A)", then heating the substrate comprising a "color forming (B)" in order to form "a colored fixed image." Since (B) is incorporated in the substrate, it is likely that part of the "colored fixed image" remains on the substrate after alteration or removal of the image. This process is illustrated below.

Nagashima et al. (US 4,148,968)

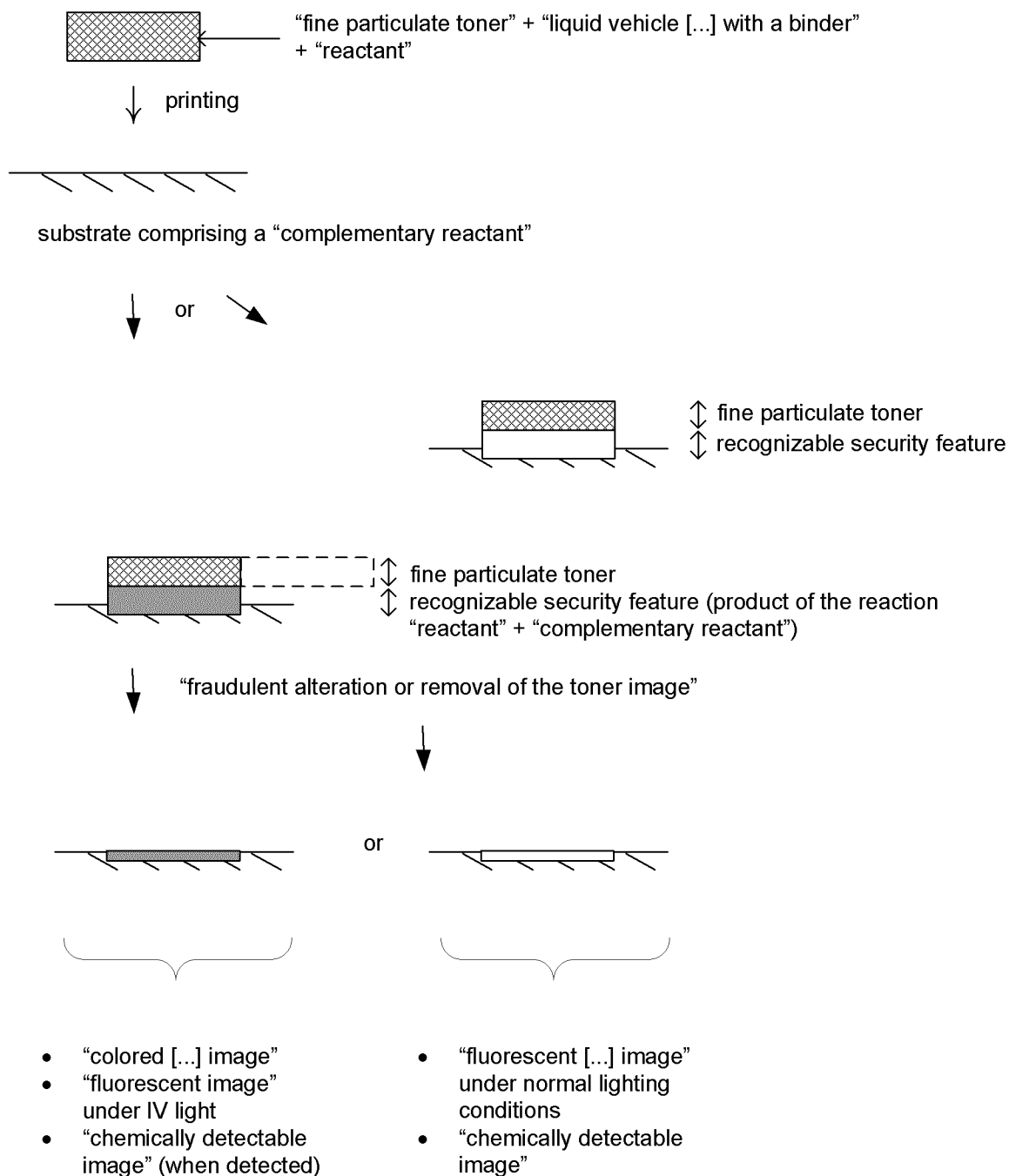
(col 3 l. 42-53)



However, this reference does not provide a reasonable solution to alteration or removal of the image, since the remaining part of the printing is a “colored fixed image.” Indeed, the “counterfeiter” will see that a part of the printing remains on the substrate, and therefore he will then try to alter or remove the remaining printing, for example by scratching the substrate more in depth. Thus, an important advantage of the presently claimed invention is that the remaining part of the printing is invisible under normal lighting conditions or without performing a specific detection step. Thus, the counterfeiter could only detect the altered document under a UV lamp. In contrast, Nagashima et al. results in a colored image which is only visible under UV light, while the image resulting from the presently claimed method is a fluorescent image under normal lighting conditions.

The presently claimed invention and the prior art processes are compared below.

Comparison with our application



Neither Dukler et al. nor Nagashima et al. teaches or suggests protection of substrates from forgery by alteration or removal of the printing. In addition, neither of these references

discloses or suggests addition of a reactant in a normal liquid toner composition as presently claimed.

Claims 16 and 23-33

The Examiner did not appear to respond to Applicant's previous argument that neither Dukler nor Nagashima provide "a security feature that is detectably retained in or on the substrate in the event of fraudulent alteration or removal of the toner image." Perhaps the Examiner believes that this feature would naturally be obtained if Nagashima's process were applied to Dukler. Claim 16 has been amended to recite "fraudulently altering or removing the toner image, while retaining the security feature on the substrate." Thus, claim 16 as amended recites that the steps of "alteration or removal" are active method steps, rather than part of a functional limitation in which the detectable reaction product is retained "in the event" of the occurrence steps.

An alteration using plain ink after removal of the original image in Dukler might result in the security feature being different than the visible image. However, in Dukler, if the toner image is fraudulently removed or altered as recited in the last step of amended claim 16, the security feature would be removed as well, and would not be identical to the original toner image. Moreover, an unexpected advantage of the invention recited in amended claim 16 is that it can detect fraudulent activity in which all or part of the toner image is removed without further alteration. In contrast, since the security feature in Dukler would not be retained on the substrate after alteration or removal, the Dukler method could not detect any fraudulent activity if all or part of the original image were removed without attempting to further alter the image.

Thus, since Dukler discloses nothing about retaining a security feature on the substrate and Nagashima discloses no security feature whatsoever, this claim is clearly patentable over Nagashima in view of Dukler. Since claims 23-33 depend either directly or indirectly on claim 16, these claims should also be patentable over these references.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

Appl. No. : 10/539,687
Filed : July 14, 2005

CONCLUSION

Applicants submit that all claims are in condition for allowance. Should there be any questions concerning this application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

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Dated: April 18, 2011

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